

**CLAIMS**

1. A method of relaying data between mobile stations in a cellular wireless communication system which comprises a plurality of mobile stations and a plurality of base stations, the method comprising the making of synchronisation transmissions from each base station within an area of coverage of the base station, the synchronisation transmissions defining a broadcast control channel for the transmission of broadcast data from the base station to mobile stations within the area of coverage; receiving the synchronisation transmissions at mobile stations within the area of coverage and extracting data therefrom defining the broadcast control channel, and at least one calling channel on which mobile stations can transmit probe data to one another, the probe data being used by mobile stations to obtain connectivity information relating to the availability of other mobile stations.
2. A method according to claim 1 wherein the broadcast data transmitted from the base station to the mobile stations contains information identifying the base station and information relating to available capacity at the base station.
3. A method according to claim 1 or claim 2 wherein the mobile stations utilise the calling channel to broadcast probe signals to other mobile stations, the probe signals from each mobile station including information on the transmission power, local background noise level and path loss to other stations.
4. A method according to claim 3 wherein mobile stations receiving probe signals from other mobile stations on the calling channel utilise the information therein to generate connectivity data relating to the other mobile stations.

-35-

5. A method according to any one of claims 1 to 4 wherein the synchronisation transmissions define at least one traffic channel usable by mobile stations to relay message data between themselves.
6. A method according to claim 5 wherein the synchronisation transmissions from the base stations are made at relatively high power and a relatively low data rate, and message data transmitted between mobile stations on the traffic channel is transmitted at a relatively low power and a relatively high data rate.